

MDC.net

Technical Reference Manual

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—Solutions

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1. What is MDC.net?

MDC.net stands for Multiple Device Control NETwork. It is a system to control and monitor devices in a broadcast station. The basic idea is to control all devices - located anywhere - from any place.

Figure 1.1 shows the minimum configuration for an MDC.net system. A PC - from now on referred to as client - and a device are connected to MDC.net. From the client-side, the device can now be controlled completely. The client does not need to know where the device is located, only a user definable device name is necessary, in order for MDC.net to do the locating. Applications can use this feature to search for a free device anywhere in the system. Figure 1.2 shows a normal configuration for MDC.net. All components will be explained on the following pages.

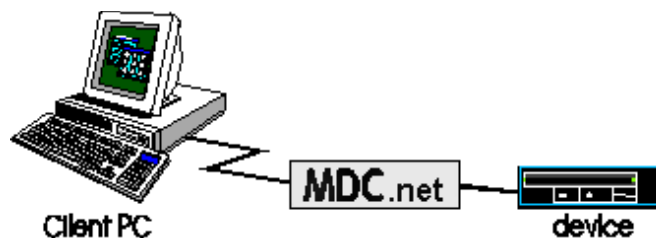


Figure 1.1

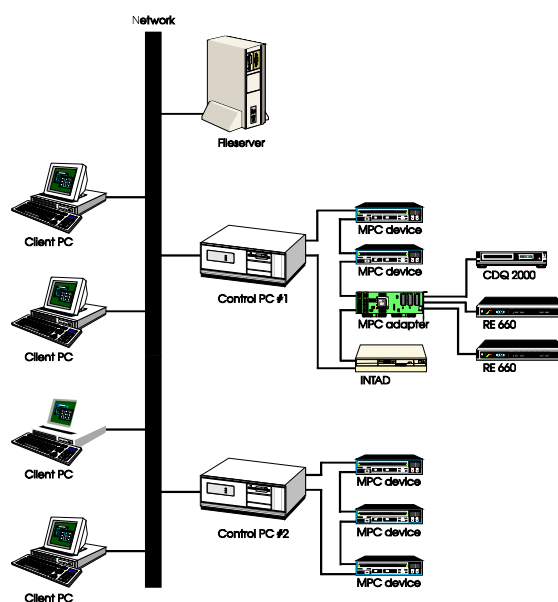


Figure 1.2

The MDC.net kernel provides the interface to the client. The kernel is implemented as a MS-Windows® DLL and called the MDC Communications DLL (MDCCom.DLL). Thus all applications that use MDC.net have to use the MS-Windows® environment. Programmers who are designing applications for MDC.net use the functions within this DLL. The kernel uses Remote Procedure Calls (RPC) to communicate with the MDC.net server. User authentication functions are available within the kernel. A system administrator can grant rights to users and groups.

All devices are connected to so-called Backends. These PCs handle the communication from the MDC.net server to the devices and in vice versa. One Backend can theoretically handle up to 127 devices; the practical maximum depends on the performance of the PC and the type of devices connected. MDC.net supports a broad range of device types. For each device type the Backend contains a device specific driver. This implies that the MDC.net Backend provides a device-independent interface to the Server, so that the applications on the ClientPC don't need to be aware of any device-specific specialities. The device capabilities - that must be known by the ClientPC application - are specified in the configuration database.

All PCs - ClientPCs as well as Backends- are connected to a server running the MDC.net Server Service. The communication between all MDC.net parts relies on RPC via TCP/IP, which implies that these communication services must be installed on all PCs. Furthermore MDC.net uses a MySQL™ database installed on the server to store the configuration and the state of the connected equipment.

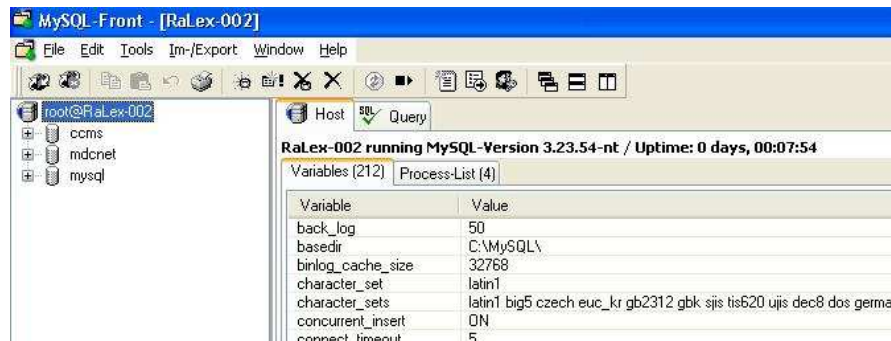
In order for the RPC communication to operate and with that allow the MDC.net Server Service to communicate with all Backends and Clients a username and password combination must be created on all MDC.net PCs in your network. These user credentials have to be equal on all PCs or one domain user account can be used.

2. Database description

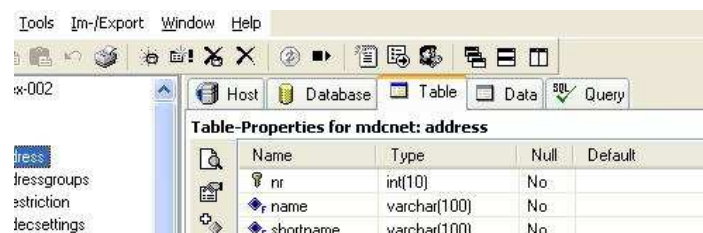
MDC.net uses a MySQL database to store the configuration as well as the more dynamic device states and routing information. Most of the MDC.net configuration can be managed using the Web Based Management (WBM). For a more detailed description of the WBM, please follow the instructions in the MDC.net User Manual. For a full control over your database as well as for the purpose of making backups and restoring information the tool MySQL-Front® has been provided with your installation. MySQL-Front offers a network connection to the MySQL database so that you can manage the database from any workstation within your network.



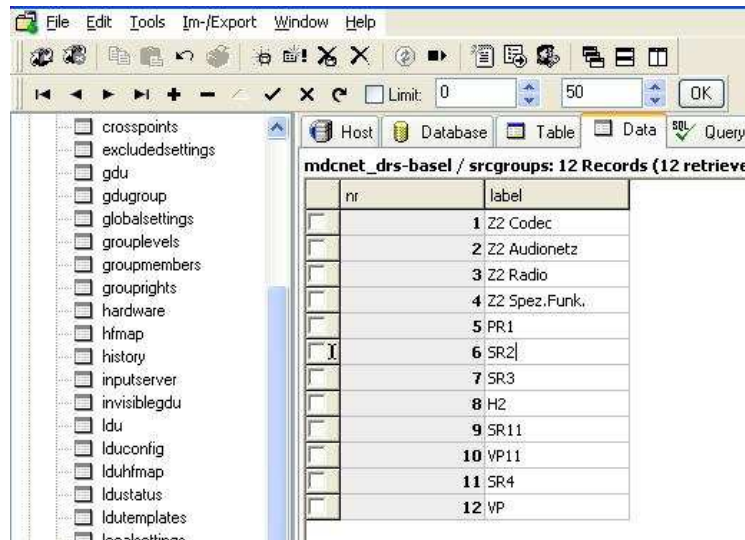
When starting MySQL-Front you will be asked to connect to the proper database host. When working on the MDC.net Server, you can just connect to "localhost", see the above picture. After connecting to the appropriate host, you can view the tables by clicking the [+] in front of the name of the database.



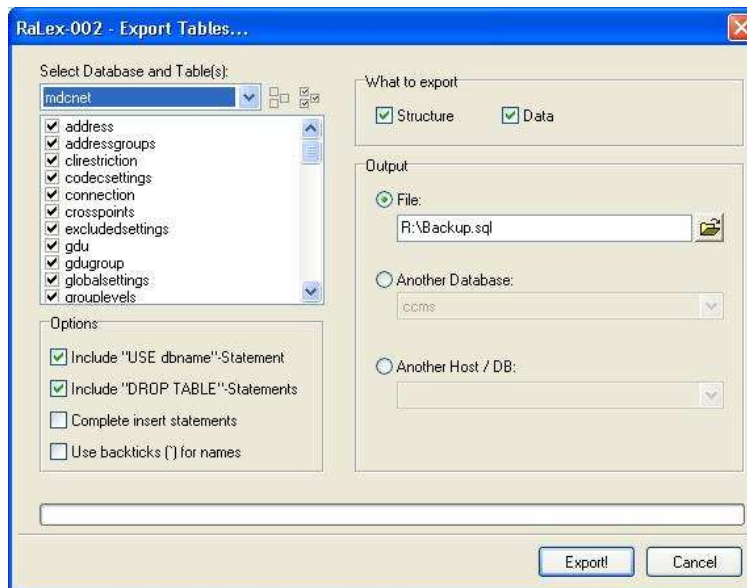
Using the tabs "Host", "Database", "Table", "Data" and "Query" you can select the desired views. The option "Data" is used to manually make changes in the tables of the database. "Query" can be used to import updates and or restore previously made backups of the database.



When editing fields within the database the buttons  and  can be used to confirm or revert the change. To confirm the change you can also select a field on another row within the same table. Use the  button to refresh the data within a table. To delete a record, the – button or <Ctrl>+<Del> can be used.



The option "Export tables..." from the Im-/Export menu allows you to create backups of your database(s). To create a full backup of a database select the desired database and make sure that all tables are selected. Also verify that the options 'Include "USE dbname"-Statement', 'Include "DROP TABLE"-Statements', 'Structure' and 'Data' are selected and choose the filename for your database backup.



Backups created in this way can be used to restore your database using the "Query" option as mentioned above. To restore a database choose the option "Load from file..." from the right-mouse-menu from the Query editor and select the previously stored database file. Choose the option "Run" from the same menu to restore the complete database.

2.1. Tables not manageable by the Web Based Management

Setting	Default value	Description
RegistrationNumber		10 digit licensenumber
BaseDir	C:\Program Files\RaLex\MDCnet	Points to the MDC.net installation directory
BackendLogDir	C:\Program Files\RaLex\MDCnet\Log	Points to a Backend log directory (same directory for all Backends)
CCMSEndpoint	http://localhost:18400	Points to the Arbor CCMS interface port for monitoring and logging purposes
UserManagerWSDLEndpoint	http://localhost/AAC_SOAP/UserManager.WSDL	Points to the Arbor UserManager Soap interface for usermanagement
UserManagerWSMLEndpoint	http://localhost/AAC_SOAP/UserManager.WSML	Currently not in use
StatusUpdateInterval	1000	Interval in milliseconds in which multiple updates are considered as a single update. Recommended values are in the range 500...1500
MDCSchedulerPort	18402	The MDC.net (Scheduler) Soap interface port
MDCSchedulerWSDLDir	C:\Program Files\Arbor\AAC_SOAP	The MDC.net (Scheduler) Soap directory
RedialDelay	5	Time in seconds after which the system issues a redial (when the line is busy)
RouteTalkbackOnly	0	Perform only Talkback (retour) routing (0 / 1)
DisconnectPreparedGDU	1	Disconnect a prepared GDU if the incoming number (CLI) is not correct (0 / 1)
DisconnectReservedGDU	0	Disconnect incoming calls if a GDU is reserved (0 / 1)
DisconnectIfNoNumber	0	Disconnect a prepared GDU if there is no number (CLI) available (0 / 1)
RouteDefaultAfterDisconnect	1	Automatically route a default after releasing a GDU (0 / 1)
AllowTransfer	0	Disabe or Enable the transfer option
ClientTransparancy	55	Client transparency (0..200)

Table globalsettings

Setting	Default value	Description
LPT1_ADR	0x378	The Backends LPT-port address
LPT1_XOR	0x00	Optional XOR value. Any bit set to 1 will be inverted when the port is read
UNIREL1_ADR	0x9800	The Backends UniRel card address
UNIREL1_XOR	0x0000	Optional XOR value. Any bit set to 1 will be inverted when the port is read
OPTOREL1_ADR	0x9800	The Backends OptoRel card address
OPTOREL1_XOR	0x0000	Optional XOR value. Any bit set to 1 will be inverted when the port is read
ADDA1_ADR	0xD000	The Backends ADDA card address
ADC10_CONV	0.0003051804379	Conversion value for ADDA port 1
ADC11_CONV	0.0003051804379	Conversion value for ADDA port 2
ADC12_CONV	0.0003051804379	Conversion value for ADDA port 3
ADC13_CONV	0.0003051804379	Conversion value for ADDA port 4
ADC10_OFFSET	0	Offset value (volts) for ADDA port 1
ADC11_OFFSET	0	Offset value (volts) for ADDA port 2
ADC12_OFFSET	0	Offset value (volts) for ADDA port 3
ADC13_OFFSET	0	Offset value (volts) for ADDA port 4

Table hardware

2.1.1. Routing tables

There are a number of tables involved to configure your router. These tables are:

- srcgroups
- studio
- routerinputs
- routeroutputs
- routercue
- routerexclude

To split inputs and outputs into groups and therefore making it possible to fit the router window to your screen the tables srcgroups (for the inputs) and studio (for the outputs) allow grouping of in- and outputs. The fields srcgroupnr (within the table routerinputs) and studionr (within the table routeroutputs) map specific in- or outputs to these groups. When these fields contain a value of 0 the in- or outputs are always visible in any group selection. To hide any in- or outputs from the Matrix window set the field issource (for inputs) or isdest (for outputs) to 0 (default).

In order to display the correct default output-group for each workstation (e.g. the faders of a specific studio) a mapping from a pc-name to a specific studio can be configured in the localsettings table.

When clearing a crosspoint a default (input) can be routed to the corresponding output. These defaults can be configured in the table routeroutputs and allow configuration of a specific input for both left and right channels. In order to automatically route these defaults, the field defaultdirection specifies the direction to be routed and should contain one of the following values. Just add up these values when a combination should be used.

Value	Direction
1	Incoming Left
2	Incoming Right
4	Talkback Left
8	Talkback Right

The MDC.net system has a very powerfull routing system that allows not just crosspoints to be made, but makes it possible to completely route all signals (forward and return, left and right) with a single mouse-click. In order for the MDC.net routing system to fulfill this task the table routercue describes the relationships between inputs and outputs (i.e. the incoming channels and their corresponding n-1 or talkback channels). This table is also used to display incoming and talkback crosspoints correctly.

2.2. Special features

Below you will find a description of special features that can be activated from within the MDC.net database.

2.2.1. QuickDials

Setting the localsettingsnr setting in the table quickdials to 0 will make the selected quickdial global. The global quickdials are displayed at all clients.

2.2.2. Shortcuts

Setting the studionr setting in the table shortcuts to 0 will make the selected shortcut global. The global shortcuts are available at all clients.

3. Explanation of special topics

3.1. The Backend

A dedicated 32-bit service version of the Backend has been developed for use with Windows® NT based operating systems.

This Backend can be started using the autostart functionality of Windows® NT services before the login window appears.

The syntax for the Backend ImagePath in the
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\MDCBackend command is:

```
BACKEND.EXE /ID <id> /DISPLAY <displaylevel> /LOGLEVEL <loglevel> /HISTORY <historysize>  
/DEBUG
```

where <id> specifies the number for the Backend (hexnumber 1 .. F), <displaylevel> can be set to increase the level of messages saved in the history and <loglevel> can be specified to increase the level of messages stored in separate device logs. Generally, the higher the DisplayLevel used, the lower the performance will be, but the more information is available. The number of lines saved in the unit specific history window can be set using <historysize>. The larger <historysize>, the more memory is needed to run the Backend. In addition a /DEBUG can be set, to log all screen messages and communications. For specific unit debugging the enable debugging checkbox can be set from within the physical units history window. These options should be used for debugging only. All the above options can be more easily configured from the Backends configuration screen.

3.2. Backend Tools

There are a few shareware utilities that in some cases must be installed in order to start the Backend. These utilities are needed to control relay, optocoupler and AD-DA cards.

3.2.1. Installing GiveIO

GiveIO is an utility that allows the Backend to “talk” with some special controller cards like UniRel, OptoRel and AD-DA cards. To install GiveIO, the driver giveio.sys has to be copied into your %SystemRoot%\SYSTEM32\DRIVERS directory. In order to complete the installation, type the following command at the command prompt:

```
INSTDRV GiveIO %SystemRoot%\SYSTEM32\DRIVERS\GIVEIO.SYS
```

Now check your Devices from the control-panel (NT4) or select Computer Management from the Administrative tools menu (Windows 2000) and make sure the service starts automatically.

In order for the Backend to control the specific ports, the device address has to be located using the PCVIEW utility. To use the PCVIEW utility, it has to be copied to a local harddisk. Now find the card by selecting the PCI-slot and checking the Vendor and DeviceID.

Enter the appropriate values for LPTx_ADR, UNIRELx_ADR, OPTORELx_ADR or ADDAx_ADR for the selected Backend in the hardware table of the MDC.net database.

Optionally for UniRel and OptoRel Cards a 16-bit XOR value can be specified within the same table in order to invert inputvalues read from the port. The default value used is 0x0000.

3.3. Configuring the Backend

Specifying the protocols and the units connected to the different communication ports does the main configuration of the Backend. This configuration can be done from the MDC.net Web Based Management and is more detailed described in the MDC.net User Manual.

3.3.1. Protocols

Protocol Name =====	Port Description =====	Communications Configuration =====	Additional Information =====
MPC	Comport xxH	9600,N,8,1	(C-Hop / SuperIO, HF-Control)
MPC_2400	Comport xxH	2400,N,8,1	(C-Hop / SuperIO, HF-Control)
MPC_1200	Comport xxH	1200,N,8,1	(C-Hop / SuperIO, HF-Control)
MPC2MPC	Comport xxH	Routed to MPC, MPC_2400 or MPC_1200	(Remote MPC Server)
BABYBLUE	Comport xxH	9600,N,8,1	
CDQ1000	Lptport/Uniport xxH	Parallel	(Use Input=xxH)
CDQ2000	Lptport/Uniport xxH	Parallel	(Use Input=xxH,Output=xxH)
CDQPRIMA	Comport xxH	38400,N,8,1	(RS-232, No Protocol)
PRIMA LT	Comport xxH	38400,N,8,1	(RS-232, No Protocol)
PRIMA LT+	Comport xxH	38400,N,8,1	(RS-232, No Protocol)
DIALOG4	Comport xxH	9600,N,8,1	
STUDIOSET1	Comport xxH	9600,N,8,1 or Routed to STUDIOSET2	(First part of STUDIOSET)
STUDIOSET2	Comport xxH	9600,N,8,1 or Routed to STUDIOSET1	(Second part of STUDIOSET)
RE662	Comport xxH		
RE663	Comport xxH		
VPPRO	Comport xxH	9600,N,8,1	(Dialog4)
ZEPHYR	Comport xxH	9600,N,8,1	(Use Telco PTP)
XSTREAM	IPport www.xxx.yyy.zzz:port		(Telos XStream over IP)
MTAXI_NET	IPport www.xxx.yyy.zzz:port		(MusicTaxi over IP)
CENTAURI	IPport www.xxx.yyy.zzz:port		(IP Communication)
HIFISCOOP3	Comport xxH	9600,N,8,1	(AT#BAU_X=4)
EAGLE	Comport xxH	38400,N,8,1	(AEQ Eagle)
PRONTO	Comport xxH	9600,N,8,1	(Prodys Pronto 1,2,3)
SUPERLINK	IPport www.xxx.yyy.zzz:port		(IP Communication)
SYSTEMBASE	Comport xxH	9600,N,8,1	(SystemBase C400)
TELOS_TWO1	IPport www.xxx.yyy.zzz:port		(First part of Telos Two over IP)
TELOS_TWO2	IPport www.xxx.yyy.zzz:port		(Second part of Telos Two over IP)
MILANO	Comport xxH	19200,N,8,1	(APT WorldNet Milano / Ohio)
CENTAURI	IPport www.xxx.yyy.zzz:port		(APT WorldNet Tokyo / Chicago)
NICA-X	Comport xxH	9600,N,8,1	(Sonifex Nica-X)
ASCOM110	Comport xxH	9600,N,8,1	
CITAM	Comport xxH	9600,N,8,1	
CITAM1	Comport xxH	9600,N,8,1	(First part of CITAM)
CITAM2	Comport xxH	9600,N,8,1	(Second part of CITAM)
MAINSTREET	Comport xxH	9600,N,8,1	
MAINSTR1	Comport xxH	9600,N,8,1 or Routed to MAINSTR2	(First part of MAINSTREET)
MAINSTR2	Comport xxH	9600,N,8,1 or Routed to MAINSTR1	(Second part of MAINSTREET)
MATRACOM	Comport xxH	9600,N,8,1	
TA2124DX	Comport xxH	1200,N,8,1	
TA2124DX1	Comport xxH	1200,N,8,1 or Routed to TA2124DX2	(First part of TA2124DX)
TA2124DX2	Comport xxH	1200,N,8,1 or Routed to TA2124DX1	(Second part of TA2124DX)
MINIDMON	Comport xxH	9600,N,8,1	
AM16B	Comport xxH	38400,N,8,1	
ROUTER_GLSNR5	Comport xxH	1200,E,7,1	
GLSNR5_VX1010	Comport xxH	Routed to Aurora VX-1010	(MPC, MPC_2400 or MPC_1200)
NTP	Comport xxH	9600,E,8,1	
NTP632	Comport xxH	9600,E,8,1	
NTP_VX1010	Comport xxH	Routed to Aurora VX-1010	(MPC, MPC_2400 or MPC_1200)
SIEMENS	Comport xxH	38400,N,8,1	
TESI	Comport xxH	9600,N,8,1	
RM3200	Comport xxH	9600,N,8,1	(DHD-RM3200 router)
RM4200	Comport xxH	38400,N,8,1	(DHD-RM4200 router)
KLOTZ	Comport xxH		(Klotz Digital)
KLOTZ_IP	IPport www.xxx.yyy.zzz:port		(Klotz Digital over IP)
BAS3232	Comport xxH	19200,N,8,1	(Philips / Thomson Router)
INTERCEPT_SW1	Comport xxH	Routed to Aurora VX-1010 (MPC or MPC_2400)	
INTERCEPT_SW2	Comport xxH	Routed to Aurora VX-1010 (MPC or MPC_2400)	
DTMF_GENERATOR	Lptport xxH	Parallel	(Internal DTMF Generator)
DTMF_GEN	Comport xxH	2400,N,8,2	(Arbor DTMF Generator)
SOPHO	IPport www.xxx.yyy.zzz:port		(Sopho PABX)

Protocol Name =====	Port Description =====	Communications Configuration =====	Additional Information =====
AURORA	Comport xxH	Routed to MPC, MPC_2400 or MPC_1200	
VIRTUAL_IO	Comport xxH	9600,N,8,1 or Routed to MPC or MPC_2400	
HFCONTROL	ADDAport xxH	AD-DA / Parallel control	(Antenna / Receiver / Transmitter)
PARALLEL_IO	OptoRelPort xxH	Parallel	(Direct IO)

3.3.2. LDU Device Types

The MDC.net applications recognize and are able to control the following unit types:

Type:
ENCODER
DECODER
TA (TERMINAL ADAPTER)
ROUTER
REMOTEROUTER
HFROUTER
ROTOR
RECEIVER
TRANSMITTER
DTMF_GENERATOR

Each type has its own set of specific commands, as could be read in chapter 1.
Usually a PDU device automatically refers to one or more specific LDU device type(s). Therefore, the LDUs are configured automatically, when a physical device (PDU) is created.

3.3.3. Connectors and pins allocation

Pin 1 of a RJ-45 connector is the left-most pin when looking at the cable side of the connector and keeping the clip down.

RJ-45 8 pin Adapter at RJ-45 side	RJ-45 8p Adapter wire color	Signal name	DB-9 DTE	DB-9 DCE	DB-25 DTE	DB-25 DCE
1	Blue	DSR	6	4	6	20
2	Orange	RTS	7	8	4	5
3	Black	SHIELD GND	-	-	-	-
4	Red	TXD	3	2	2	3
5	Green	RXD	2	3	3	2
6	Yellow	SIGNAL GND	5	5	7	7
7	Brown	CTS	8	7	5	4
8	Gray or White	DTR	4	6	20	6
-	-	DCD	1	1	8	8
-	-	RI	9	9	22	22

To create a standard PC RS-232 connector compatible with the Digiboard standard, wire as follows:

PC (9-pol): DB-9 DTE MALE
PC (25 pol): DB-25 DTE MALE

Following describes the RJ-45 **adapter** needed and its wiring when connected to a **Digiboard**:

PC (9-pol): DB-9 DCE FEMALE
 PC (25 pol): DB-25 DCE FEMALE

Ascom110 DB-25 DTE MALE
 TA2124DX DB-25 DTE MALE
 TA2124DX-MultiPoint DB-9 DTE MALE
 Telos Zephyr: DB-9 DCE FEMALE
 RE 662/663: DB-25 DTE MALE
 StudioSet: DB-9 DTE MALE
 DHD RM3200: DB-9 DTE MALE
 AETA Hifiscoop3 DB-9 DTE MALE
 NTP DB-9 DCE FEMALE
 CDQPrima Ancillary DB-9 DCE FEMALE
 Prodys Pronto DB-9 DTE MALE
 SystemBase C400 DB-9 DTE MALE ?
 WorldNet Milano DB-9 DTE MALE
 Sonifex NicaX DB-9 DTE MALE

CDQ-Prima: DB-9 MALE; Special wiring:

RJ-45 Adapter wire color	Insert at pin
Red	4
Green	9
Yellow	5

CITAM Supervisor port: RJ-12; Special wiring:

Citam RJ-12	Digiboard RJ-45	PC DB-9 Female
3	5	2 (green)
4	4	3 (red)
6	6	5 (yellow)

DTMF-Generator to Digiboard cable:

DTMF-Gen RJ-12	Digiboard RJ-45
3	6
4	4

CDQ-200x connectors for remote control are wired as follows:

OptoRel Signal	37 pol. Male	CCS CDQ200x Signal	CDQ2000 Pin (9 pol. Male)	CDQ2001 Pin (26 pol. HD Male)
Output b0	1*	Select A	2	11
Output b1	2*	Select B	3	7
Output b2	3*	Select C	4	5
Output b3	4*	Line 1	6	2
Output b4	5*	Line 2	7	4
Output b5	6*	Mode	8	6
Output b6	7*	Type	9	10
Output b7	8*	Remote Enable	1**	1**
Ground	19	Ground	5	9,18,24

* Pins 20...27 need to be grounded at 37 pol. Male connector.

** In case of wiring problems Pin 1 (Remote Enable) may directly be connected to Pin 5 (Ground).

CDQ-1000 and CDQ-200x Alarm detection cables are wired as follows:

OptoRel Signal	37 pol. Female	CDQ 1000 3,5mm Jack	CDQ 200x (9 pol. Female)
Input b0	1*	Tip	1
Ground	19	Ring	5

*Pin 20 needs to be connected to Pin 37 (Vcc).

OptoRel resistorpack needs to be replaced by the proper value (470...2kOhm).

3.4. Remote routing

Remote Routing allows the switching of a router at a remote location. The information about the remote router's connections is stored in the addressbook (each connection must be stored as a separate address). The router can be accessed via a direct serial line or through the ancillary datachannel of an audio connection. Alternatively there is the possibility that the Remote Router switching is done by the terminal adapter, making use of special control signals within the ISDN connection (as with the "RNC" version of TA2124DX) or as DTMF tones send via the audio connection.

The TechInfo field in the addressbook is used to specify the information about the remote router connection. The format of the field is:

[Inn] [Omm]

Where nn is an (optional) Inputnumber and mm is (optional) Outputnumber. The system sends a remote routing command to the RemoteRouter device belonging to the GDU. If nn or mm is not specified the default of 1 is taken. In practice this means that specifying "I03" for the techinfo will cause the system to select input 3 on the remote router. This is normally enough.

3.5. Cost accounting

Costaccounting in Version 2 is not yet available.

3.6. MDC.net Monitor

MDC.net Monitor is a service application that can be used for advanced monitoring of the ISDN connections. The monitor program allows the user to set switches uppon connection and synchronisation and automatically releases the switches at synchronisation or connection loss.

Another feature of the Monitor application is the ability to set a switch and / or play a windows® wave file if synchronisation has been lost.

3.7. MDC.net Scheduler

The MDC.net Scheduler is a service application that can be used in conjunction with any (web-based) scheduler. It provides a flexible SOAP interface that can be used to allow automated codec connections and (remote-) routing.

4. Specific Device Behavior

4.1. MAYAH Centauri

Please configure the network-timeout setting in order to prevent the connection to become stale. The timeout setting can be set from the menu: Settings / Timeouts / Remote Control. We recommend a timeout of 90 seconds. Using Centauri Remote, this can be done using: Expert / Direct Command and enter the command "time_remotecontrol".
The next Commands will be transmitted to the MAYAH Centauri when the Codec settings are changed:

"Enc_format Auto"

"Enc_bitrate <BitRate>"

"Enc_srate <SampleRate>"

Encoder DataMode:

1ch CCS ...6ch CCS and 1ch H221 ... 6ch H221

"Enc_format CCS"

"Enc_algo Mpeg12"

Encoder DataMode:

2ch Dlg4L2 ...6 ch Dlg4L2:

"Enc_format Musictaxi"

"Enc_algo Mpeg12"

Encoder DataMode:

Unframed, 2ch RE ...6ch RE:

"Enc_algo Mpeg12"

Encoder DataMode:

1ch J52 ...6ch J52:

"Enc_algo AAC"

Encoder DataMode:

G722/H221 and G722:

"Enc_algo G.722"

Encoder DataMode:

2ch CCSL3 ...6ch CCSL3:

"Enc_format CCS"

"Enc_algo Mpeg13"

Encoder DataMode:

2ch DLG4_L3 ...6ch DLG4_L3:

"Enc_format Musictaxi"

"Enc_algo Mpeg13"

Encoder DataMode:

1ch Layer3, 2ch D4SL3 ...6ch D4SL3,

2ch TelosL3 ...6ch TelosL3:

"Enc_algo Mpeg13"

Encoder DataMode G711ALAW:

"Enc_algo G.711"

"ISDN_g711 alaw"

Encoder DataMode G711MLAW:

"Enc_algo G.711"

"ISDN_g711 ulaw"

Encoder DataMode not G.722, G722/H221, G722NBT, G711ALAW or G711MLAW

Encoder AudioMode Stereo:

"Enc_mode Stereo"

Encoder AudioMode Joint Stereo:

"Enc_mode Joint"

Encoder AudioMode Dual Channel:

"Enc_mode Dual"

Encoder AudioMode Mono:

"Enc_mode Mono"

Encoder DataMode: G.722, G722/H221, G722NBT, G711ALAW or G711MLAW

"Enc_mode Mono"

Encoder Dependent YES

"Enc_slave Remote"

Encoder Dependent NO

"Enc_slave Local"

"Dec_slave Remote"

4.2. CCS CDQ 1000

The CDQ1000 is a codec that is on the market since the early nineties, before the MPEG2 standard had been defined. Apart from this, there were misunderstandings about the interpretation of CRC algorithm in MPEG1.

Therefore the older CDQ1000 codecs were not MPEG compliant in two aspects:

1. Wrong CRC
2. Proprietary 24kHz mode, instead of the MPEG2 standard

In newer versions these problems were solved, but to maintain compatibility with older systems, the use of the correct algorithms could be set by a dipswitch at the back of the unit.

To set a CDQ1000 in MPEG compliant mode, you must set Dipswitches 6 and 8 to "ON" (up). Test this using both 24 and 48 kHz. If it still doesn't work, your CDQ1000 might be an early unit. In this case it needs a firmware upgrade.

With the latest firmware it is advised to switch dipswitch 7 to "ON" as well, as this will provide increased stability when using G.722.

4.3. AETA HifiScoop 3

The AETA HifiScoop 3 uses ScaleFactorCRC On and Off, to enable or disable the relay transmission function.

A combination of Encoder InputMode and Encoder OutputMode is used for the HifiScoop 3 to set the format for the audio interfaces. Configuration is done as follows:

Interface type	InputMode	OutputMode
Analog:	Analog or Analog Unbalanced;	Don't care
AES/EBU Async	Digital or Digital SPDIF	External
AES/EBU 32kHz	Digital or Digital SPDIF	32
AES/EBU 48kHz	Digital or Digital SPDIF	48

4.4. CCS CDQPrima

To set the CDQPrima to CDQ 1000 24kHz proprietary mode use DataMode 1ch CCS.
 2ch CCS can be used to setup the CDQPrima into CDQ2000/2001 inverse multiplexing protocol.
 Use 1ch ... 6ch H221, 1ch... 6ch J52, 3ch ... 6ch CCS to use the CDQPrima H221 protocol.
 1ch or 2ch nnnDISTRIBUTIONm is the CDQPrima Distribution mode, where nnn (G722, L2, CCS or L3) is the used protocol and m ("empty", 2 or 3) is the number of destinations.
 Decoder Dependent Yes or No is used to switch the CDQPrima Decoder Independent No or Yes setting.

4.5. Dialog4 VP-128

ISDNMode is used for Dialog4 codecs compatibility. Please refer to the Dialog4 User Manual for a more detailed description.

Mode	Compatibillity
R	MusicTaxi
DNR	CCS
DNRI	Telos

4.6. Dialog4 VP-Pro

ISDNMode is used for Dialog4 codecs compatibility. Please refer to the Dialog4 User Manual for a more detailed description.

Mode	Compatibillity
R	MusicTaxi
C	CCS CDQPrima
DXI	Telos

4.7. Dialog4 MusicTAXI MT-NET

ISDNMode is used for Dialog4 codecs compatibility. Please refer to the Dialog4 User Manual for a more detailed description.

Mode	Compatibility
NRI	CCS CDQPrima
DR	Telos
DRI	G722 SRT
DNR	H221 (G722)
DNRI	Auto

4.8. DHD Routing and MDC.net Router table configuration

To configure the MDC.net router tables for inputs / outputs use the DHD slotnumber (1 or 2 digits) followed by 1 digit of the corresponding connector and 2 digits for the input or output. E.g. Router input / output 10123 would be slot 10 (Madi) connector 1, input / output 23. These numbers correspond with the export tables of the DHD system.

4.9. TA 2124 DX/CP

TA2124DX connected to MDC.net without MPP2000:

Port 1 (at.) and Port 2 (at.):
X1 &B8 &C1 &D0 &M7 #B1 #C1 #N #W0 S00=001
&W (= save config)

Control Port (at;):
V1 X1 &K1 &N0 &B0
Now change to 1200 baud
E0
&W (= save config)

TA2124DX connected to MDC.net with MPP2000:

Als zonder MPP2000
MPP2000 dipswitches:
DIP1: ON
DIP2: X (don't care, OFF = Keyboard enabled, ON = Keyboard disabled)
DIP3: ON
DIP4: ON

TA2124DX connected to DXD (dialer) without MPP2000:

Port 1 (at.) en Port 2 (at.):
X1 &B8 &C0 &D0 &M0 #B1 #C1 #N #W0 S00=001 (auto-answer)
&W (= save config)

Control Port (at;):
E1 V1 X1 &K1 &N0 &B3
Now change to 9600 baud
&W (= save config)

TA2124DX connected to DXD (dialer) with MPP2000:

Port 1 (at.) en Port 2 (at.):
X0 &B8 &C0 &D0 &M0 #B1 #C1 #N #W0 S00=001 (auto-answer)
&W (= save config)

Control Port (at;):
E1 V1 X1 &K1 &N0 &B3
Now change to 9600 baud
&W (= save config)

MPP2000 dipswitches:
DIP1: OFF
DIP2: OFF
DIP3: OFF
DIP4: OFF

4.10. AEQ Eagle

In order to control the AEQ Eagle codec, its node address should be set to the same id as the unit-id specified in MDCNET.CFG.

4.11. Prodys Pronto

The Datamode 2CH Dlg4L2 is used to configure the Prodys Pronto for MPEG Layer II Telos mode. Inputmode Digital activates AES/EBU:EXT mode and Inputmode Digital SPDIF activates AES/EBU:AUDIO for the Pronto 3. All other models just activate AES/EBU in either case. When selecting 32 kHz samplingrate for models 1 and 2 48 kHz will be activated. Dual codecmode is not yet supported.

4.12. WorldNet Milano

All MDC.net settings apply to encoder-settings only!

MDC.net setting	WorldNet Milano Settting	Imux mode	Comments
APTX	APTX-16	Imux	
APTX16	E-APTX-16	Imux	
APTX20	E-APTX-20	Imux	
APTX24	E-APTX-24	Imux	
APTXNO	APTX-16	Clear Mode	Only for Audiomode = Mono
Dependent Yes	AutoSync On		Only valid in APTX mode
Dependent No	AutoSync Off		
Audiomode Mono	WorldNet Monofill		
Audiomode Dual channel	Dual		

4.13. Sonifex NicaX

Only the first codec is supported.

All settings below are Encoder only settings. Codec-settings specified for the Decoder are ignored. When Encoder Dependent YES is selected the NicaX will be configured for Auto Detect (mode 1). Datamode APTX, APTX16, APTX20, APTX24 and APTXNO selects the APT ISDN mode. If the Audiomode is set to anything but MONO, APT ISDN IMUX-S is selected. If however MONO is selected, any bitrate higher than 64 kbit will select the APT ISDN IMUX-M mode. Clear-Mode is selected otherwise. The Datamode G722, G722/H221, G722distribution and G722NBT will select the G722 ISDN-M mode. Datamode DLG4L2, L2distribution and MPEGL2 will select the L2 ISDN-M mode and the desired samplerate can be specified (24 or 48). Configuration of the Ancillary-data (Auxiliary Data Rate) is supported.

4.14. Telos Xstream

Prior to using the Telos Xstream in combination with the MDC.net Backend, the default login password of the Telos has to be cleared. This can be done by setting-up a telnet session to the Telos and typing the following command: "Login Telos -", without the quotation marks (").

4.15. Tieline Commander G3

In order for the MDC.net Backend Service to be able to control the Tieline Commander G3 the profiles "ManDflt MonoPgm" and "ManDflt Stereo" must exist. These profiles are used to switch between Mono and Stereo modes including the control of the internal audio-matrix.

The simultaneous use of the "POTS"-Interface and the "ISDN"-Interface is not supported.

In any "POTS"-mode the "bitrate"-selection sets the "Modem Max. Bitrate" and the "samplerate" is ignored.

Please use the settings shown in the table below, to achieve the corresponding settings for the Tieline Commander G3 codec. Decoder settings are not used to configure the Tieline Commander G3.

MDC.net Datamode	MDC.net Audiomode	Tieline Codec selection	Comment
POTS		Music	"POTS"-Interface
POTS-Music		Music	"POTS"-Interface
POTS-Other		Other	"POTS"-Interface
POTS-Voice		Voice G3	"POTS"-Interface
GSM-Music		Music	"POTS"-Int. in GSM-LL mode
GSM-Other		Other	"POTS"-Int. in GSM-LL mode
GSM-Voice		Voice G3	"POTS"-Int. in GSM-LL mode
ISDN-Music		Music	"ISDN"-Interface
ISDN-Other		Other	"ISDN"-Interface
ISDN-Voice		Voice G3	"ISDN"-Interface
G722		G722	"ISDN"-Interface
G722NBT		G722	"ISDN"-Interface
G722/H221		G722	"ISDN"-Interface
G711ALAW		G711	"ISDN"-Interface
G711MLAW		G711	"ISDN"-Interface
Any other	Mono	MP2 Mono	"ISDN"-Interface
Any other	Joint Stereo	MP2 Joint Stereo	"ISDN"-Interface
Any other	Stereo	MP2 Stereo	"ISDN"-Interface
Any other	Dual Mono	MP2 Dual	"ISDN"-Interface